

# ***Pedro M. Varona***

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## **Mining Engineering**

<b><i>Expertise</i></b>	Mining Engineering, Rock Mechanics, Numerical Modeling
<b><i>Education</i></b>	Ingeniero Superior de Minas (Geology and Geophysics), 1986 Escuela Tecnica Superior de Ingenieros de Minas de Madrid, Spain
<b><i>Professional Affiliations</i></b>	Member, AETOS (Spanish Association of Tunnels & Underground Works)

## ***Professional Experience***

<i>1996 - Present</i>	<i>Itasca Consultores S.L., Asturias, Spain, Manager</i>
<i>1995 - 1996</i>	<i>Itasca Associates, Asturias, Spain, Independent Consultant</i>
<i>1991 - 1995</i>	<i>Itasca Consulting Group, Inc., Minneapolis, Minnesota, Project Engineer</i>
<i>1985 - 1991</i>	<i>Geocontrol S.A., Madrid, Spain, Engineer</i>

## ***Project Experience***

*Mining Engineering:* Open-pit stability analysis for Syncrude (Canada), Chuquicamata (Chile) and Hulleras de Sabero (Spain); Numerical analysis of underground mining operations in Canada, Chile, Republic of South Africa, Spain, United States; Study of mining induced subsidence problems: damage to buildings and to other underground works and several coal mines in Spain.

*Civil Engineering:* Projects involving tunnels, large caverns and foundation problems in France, Indonesia, Korea, Spain, Sweden and United States; Installation of a computerized rock mechanics laboratory with real-time information processing.

*Numerical Codes:* Training seminars for FLAC and FLAC3D in Canada, Chile, Finland, Spain, Sweden and the United States.